



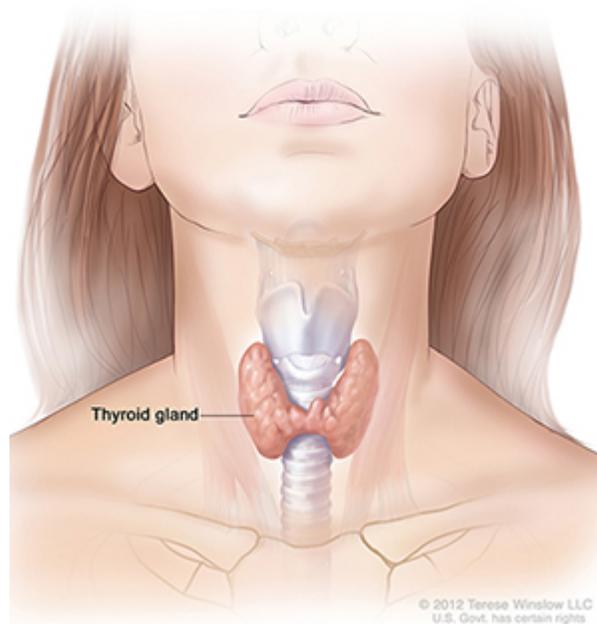
Graves' Disease

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What is Graves' disease?

Graves' disease is an [autoimmune disorder](#) that causes [hyperthyroidism](#), or overactive thyroid. With this disease, your [immune system](#) attacks the thyroid and causes it to make more thyroid [hormone](#) than your body needs. The thyroid is a small, butterfly-shaped gland in the front of your neck. Thyroid hormones control how your body uses energy, so they affect nearly every organ in your body—even the way your heart beats.



The thyroid is a small gland in your neck that makes thyroid hormones.

If left untreated, hyperthyroidism can cause serious problems with the heart, bones, muscles, menstrual cycle, and fertility. During pregnancy, untreated hyperthyroidism can lead to health problems for the mother and baby. Graves' disease also can affect your eyes and skin.

How common is Graves' disease?

Graves' disease is the most common cause of hyperthyroidism in the United States. The disease affects about 1 in 200 people.¹

Who is more likely to develop Graves' disease?

Graves' disease usually affects people between ages 30 and 50, but can occur at any age.² The disease is seven to eight times more common in women than men.³ A person's chance of developing Graves' disease increases if other family members have the disease.

People with other autoimmune disorders are more likely to develop Graves' disease than people without these disorders. Conditions linked with Graves' disease include

- [rheumatoid arthritis](#) [NIH](#), a disorder that affects the joints and sometimes other body systems
- [pernicious anemia](#) [NIH](#), a condition caused by a vitamin B12 deficiency
- [lupus](#) [NIH](#), a chronic, or long-term, disorder that can affect many parts of your body
- [Addison's disease](#), a hormonal disorder
- [celiac disease](#), a digestive disorder
- [vitiligo](#) [NIH](#), a disorder in which some parts of the skin are not pigmented

- [type 1 diabetes](#)

What other health problems could I develop because of Graves' disease?

Without treatment, Graves' disease can cause some serious health problems, including

- an irregular heartbeat that can lead to blood clots, [stroke](#), [heart failure](#), and other heart-related problems
- an eye disease called [Graves' ophthalmopathy](#) or Graves' orbitopathy (GO), which can cause double vision, light sensitivity, and eye pain—and, rarely, can lead to vision loss
- thinning bones and [osteoporosis](#) [NIH](#) 

Is Graves' disease during pregnancy a problem?

Thyroid hormone levels that are just a little high are usually not a problem in pregnancy. However, more severe hyperthyroidism that isn't treated can affect both the mother and the baby. If you have Graves' disease, be sure your hyperthyroidism is under control before becoming pregnant. Learn more about causes, diagnosis, and treatment of [hyperthyroidism during pregnancy](#).

What are the symptoms of Graves' disease?

You may have common symptoms of hyperthyroidism such as

- fast and irregular heartbeat
- frequent [bowel movements](#) or diarrhea
- [goiter](#)
- heat intolerance
- nervousness or irritability
- tiredness or muscle weakness
- trembling hands
- trouble sleeping
- weight loss

Rarely, people with Graves' disease develop a reddish thickening of the skin on the shins, a condition called pretibial myxedema or Graves' dermopathy. This skin problem is usually painless and mild, but it can be painful for some.

GO can cause retracted eyelids, meaning the eyelids are pulled back from the eye. GO can also cause bulging eyes, double vision, and swelling around the eyes.

What causes Graves' disease?

Researchers aren't sure why some people develop autoimmune disorders such as Graves' disease. These disorders probably develop from a combination of [genes](#) and an outside trigger, such as a [virus](#).

With Graves' disease, the immune system makes an [antibody](#) called thyroid-stimulating immunoglobulin (TSI) that attaches to thyroid cells. TSI acts like thyroid-stimulating hormone (TSH), a hormone made in the [pituitary gland](#) that tells the thyroid how much thyroid hormone to make. TSI causes the thyroid to make too much thyroid hormone.

How do health care professionals diagnose Graves' disease?

Your health care provider may suspect Graves' disease based on your symptoms and findings during a physical exam. One or more blood tests can confirm that you have hyperthyroidism and may point to Graves' disease as the cause.

Other clues that hyperthyroidism is caused by Graves' disease are

- an enlarged thyroid
- signs of Graves' eye disease, present in about one out of three people with Graves' disease⁴
- a history of other family members with thyroid or autoimmune problems

If the diagnosis is uncertain, your doctor may order further blood or [imaging](#) tests to confirm Graves' disease as the cause.

A blood test can detect TSI. However, in mild cases of Graves' disease, TSI may not show up in your blood. The next step may be one of two imaging tests that use small, safe doses of radioactive iodine. Your thyroid collects iodine from your bloodstream and uses it to make thyroid hormones; it will collect radioactive iodine in the same way.

- **Radioactive iodine uptake test.** This test measures the amount of iodine the thyroid collects from the bloodstream. If your thyroid collects large amounts of iodine, you may have Graves' disease.
- **Thyroid scan.** This scan shows how and where iodine is distributed in the thyroid. With Graves' disease, the entire thyroid is involved, so the iodine shows up throughout the gland. With other causes of hyperthyroidism such as nodules—small lumps in the gland—the iodine shows up in a different pattern.

[Learn more about thyroid tests.](#)

What are my treatment options for Graves' disease?

You have three treatment options: medicine, radioiodine therapy, and thyroid surgery.

Radioiodine therapy is the most common treatment for Graves' disease in the United States,⁴

but doctors are beginning to use medicine more often than in the past.^{5,6} Based on factors such as your age, whether you are pregnant, or whether you have other medical conditions, your doctor may recommend a specific treatment and can help you decide which one is right for you.

Radioiodine therapy

For radioiodine therapy, you take radioactive iodine-131 (I-131) by mouth as a capsule or liquid. I-131, at a higher dose than the dose used for imaging tests, slowly destroys the cells of the thyroid gland that produce thyroid hormone. The dose of I-131 usually used for radioiodine therapy does not affect other body tissues.



You take radioactive iodine-131 as a capsule or liquid.

Although it's unlikely, you may need more than one radioiodine treatment to bring your thyroid hormone levels into the normal range. In the meantime, treatment with medicines called beta blockers can control your symptoms.

Almost everyone who has radioactive iodine treatment later develops [hypothyroidism](#), or underactive thyroid, because the thyroid hormone-producing cells have been destroyed. However, hypothyroidism is easier to treat and causes fewer long-term health problems than hyperthyroidism. People with hypothyroidism can completely control the condition with daily thyroid hormone medicine.

Doctors don't use radioiodine therapy to treat pregnant women or women who are breastfeeding. Radioactive iodine can harm the fetus' thyroid and can be passed from mother to child in breast milk.

Medicines

Beta blockers. Beta blockers don't stop your thyroid from producing thyroid hormone but can reduce symptoms until other treatments take effect. These medicines act quickly to relieve

many of the symptoms of hyperthyroidism, such as trembling, rapid heartbeat, and nervousness. Most people feel better within hours of taking beta blockers.

Antithyroid medicines. Antithyroid therapy is the simplest way to treat hyperthyroidism. Antithyroid medicines cause your thyroid to make less thyroid hormone. These medicines usually don't provide a permanent cure, but in some people, the effects last a long time after they stop taking the medicine. Doctors most often use the antithyroid medicine [methimazole](#) [NIH](#) .

Doctors usually treat pregnant and breastfeeding women with antithyroid medicine, since this treatment may be safer for the baby than other treatments. Doctors use [propylthiouracil](#) [NIH](#)  more often than methimazole during the first 3 months of pregnancy because methimazole may harm the fetus, although this happens rarely. Also rarely, propylthiouracil may affect the fetus, but any effects are less harmful than having uncontrolled hyperthyroidism during pregnancy.

Once treatment with antithyroid medicine begins, your thyroid hormone levels may not move into the normal range for several weeks or months. The total average treatment time is about 12 to 18 months,⁷ but treatment can continue for many years in people who don't want radioiodine or surgery to treat their Graves' disease.

Antithyroid medicines can cause side effects in some people, including

- allergic reactions such as rashes and itching
- a decrease in the number of white blood cells in your body, which can lower resistance to infection
- [liver failure](#), in rare cases

Call your doctor right away if you have any of the following symptoms:

- fever
- sore throat
- tiredness
- weakness
- dull pain in your [abdomen](#)
- loss of appetite
- skin rash or itching
- easy bruising
- yellowing of your skin or whites of your eyes, called jaundice
- constant sore throat
- fever

Thyroid surgery

The least-used treatment for Graves' disease is surgery to remove the thyroid gland. Sometimes doctors use surgery to treat people with large goiters, or pregnant women who are allergic to or have side effects from antithyroid medicines.

Before surgery, your doctor will prescribe antithyroid medicines to bring your thyroid hormone levels into the normal range. This treatment prevents a condition called thyroid storm—a sudden, severe worsening of symptoms—that can occur when people with hyperthyroidism have general [anesthesia](#) [NIH](#) [↗](#).

After surgery to remove your thyroid, you will develop hypothyroidism and need to take thyroid hormone medicine every day for life. After surgery, your doctor will continue to check your thyroid hormone levels and adjust your dose as needed.

What is Graves' ophthalmopathy (GO)?

GO is a condition that occurs when the immune system attacks the muscles and other tissues around the eyes.

The result is [inflammation](#) and a buildup of tissue and fat behind the eye socket, causing the eyeballs to bulge out. Rarely, inflammation is severe enough to compress, or push on, the optic nerve that leads from the eye to the brain, causing vision loss.

Symptoms

Besides bulging eyes, other GO symptoms are

- dry, gritty, and irritated eyes
- puffy or retracted eyelids
- double vision
- light sensitivity
- pressure or pain in the eyes
- trouble moving the eyes

About one in three people with Graves' disease develop mild GO, and about 5 percent develop severe GO.⁷ This eye condition usually lasts 1 to 2 years and often improves on its own.

GO can occur before, at the same time as, or after other symptoms of hyperthyroidism develop. Eye problems sometimes develop long after Graves' disease has been treated, but this happens rarely. GO may even occur in people whose thyroid function is normal. Smoking makes GO worse. If you smoke and need help quitting, go to [SmokeFree.gov](#) [↗](#).

Treatment

The eye problems of Graves' disease may not improve after thyroid treatment, so doctors often treat the two problems separately.

Eye drops can relieve dry, gritty, irritated eyes—the most common of the milder symptoms. If pain and swelling occur, your doctor may prescribe a steroid such as [prednisone](#) [NIH](#) [↗](#). Other medicines that reduce your body's immune response, such as [rituximab](#) [NIH](#) [↗](#), may also provide relief.



Eye drops can relieve dry, gritty, irritated eyes.

Sunglasses can help with light sensitivity. Special eyeglass lenses may help reduce double vision. If you have puffy eyelids, your doctor may advise you to sleep with your head raised to reduce swelling. If your eyelids do not fully close, taping them shut at night can help prevent dry eyes.

Your doctor may recommend surgery to improve bulging of your eyes and correct the vision changes caused by pressure on the optic nerve. A procedure called orbital decompression makes the eye socket bigger and gives the eye room to sink back to a more normal position. Eyelid surgery can return retracted eyelids to their normal position.

Rarely, doctors treat Graves' eye disease with radiation therapy to the muscles and tissues around the eyes.

What should I avoid eating if I have Graves' disease?

People with Graves' disease may be sensitive to harmful side effects from iodine. Eating foods that have large amounts of iodine—such as kelp, dulse, or other kinds of seaweed—may cause or worsen hyperthyroidism. Taking iodine supplements can have the same effect.

Talk with your health care professional about what foods you should limit or avoid, and let him or her know if you take iodine supplements. Also, share information about any cough syrups or multivitamins that you take because they may contain iodine.

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